
ITW Polymers Sealants

1
00:00:00,506 --> 00:00:09,056
[Music]

2
00:00:09,556 --> 00:00:11,726
>> My name is Dr.
Dionne Hernandez-Lugo,

3
00:00:11,786 --> 00:00:13,176
and I work in the Photovoltaic

4
00:00:13,176 --> 00:00:14,956
and Electrochemical
Systems Branch.

5
00:00:15,416 --> 00:00:18,066
My official title is a
Research Electrical Engineer,

6
00:00:18,186 --> 00:00:21,556
but I'm serving as the Project
Manager for the HyDRUS project.

7
00:00:22,216 --> 00:00:25,116
I've been here at NASA
Glenn close to five years,

8
00:00:25,206 --> 00:00:27,986
counting some co-op
time, and I've been part

9
00:00:27,986 --> 00:00:29,806
of this branch for
-- for that time.

10
00:00:30,586 --> 00:00:31,576
So HyDRUS stands

11
00:00:31,576 --> 00:00:35,776
for Hyperspectral HAB detection

via remote UAV sensing.

12
00:00:36,226 --> 00:00:39,446
And HAB is harmful
algal blooms, and UAV,

13
00:00:39,446 --> 00:00:42,126
it's unmanned air vehicle,
which people call drones.

14
00:00:42,846 --> 00:00:46,116
So the algal blooms
are a cyanobacteria,

15
00:00:46,616 --> 00:00:48,366
which are formed on the lake.

16
00:00:48,626 --> 00:00:51,956
They are very toxic
if consumed by --

17
00:00:51,956 --> 00:00:56,216
by a human, and they're also
very toxic to our ecosystem.

18
00:00:56,726 --> 00:00:58,936
The main objective
of this project is

19
00:00:58,986 --> 00:01:01,276
to develop a small version

20
00:01:01,636 --> 00:01:05,726
of our hyperspectral imaging
system, to be able to mount it

21
00:01:05,726 --> 00:01:08,856
on a UAV, and have the
capability of going

22
00:01:08,856 --> 00:01:11,976
out on the lake and
imaging these HABs there.

23
00:01:12,816 --> 00:01:15,886
This allows for a
water treatment plant

24
00:01:15,926 --> 00:01:19,856
to have an early warning, which
allows us to have cleaner water

25
00:01:19,856 --> 00:01:21,266
and a better quality of life.

26
00:01:21,826 --> 00:01:24,916
Not only does it allow
you to have the capability

27
00:01:25,326 --> 00:01:30,946
of flying a little bit more then
what the operations would be

28
00:01:31,046 --> 00:01:32,786
on a -- on a manned aircraft,

29
00:01:33,066 --> 00:01:37,436
but it also gives the
opportunity to the public

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00:01:37,436 --> 00:01:40,986
to use this kind of
instrument for other areas,

31
00:01:41,026 --> 00:01:47,356
such as agriculture, also solar
panel health, and other areas

32
00:01:47,466 --> 00:01:50,216

where an instrument like
this, which is cost-effective,

33
00:01:50,216 --> 00:01:54,426
it's low weight, can be
used for other applications.

34
00:01:55,056 --> 00:01:57,356
For me, as a physical chemist,

35
00:01:57,416 --> 00:02:00,536
STEM education is
very, very important.

36
00:02:00,566 --> 00:02:04,516
Not only in early stages,
right, K to 12, but --

37
00:02:04,826 --> 00:02:08,436
but also, you know, those that
have the interest and want

38
00:02:08,436 --> 00:02:11,066
to continue this, either as
their bachelor's or their PhD.

39
00:02:11,066 --> 00:02:14,506
It was a dream, just
basically, coming true, right?

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00:02:14,576 --> 00:02:17,006
So, as soon as I walked
in through those gates, I,

41
00:02:17,006 --> 00:02:20,776
you know, I just started crying
because it was what I wanted,

42
00:02:20,776 --> 00:02:25,396
and I've been to different

paths, and I didn't know

43
00:02:25,396 --> 00:02:28,266
that the path that I was taking
in school, and the things

44
00:02:28,266 --> 00:02:32,006
that I have decided to do
would allow me to get here.

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00:02:32,416 --> 00:02:35,806
Growing up, I always
wanted to come

46
00:02:35,806 --> 00:02:37,516
and work here at -- at NASA.

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00:02:37,516 --> 00:02:39,206
I really did not
know how to get here.

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00:02:39,206 --> 00:02:41,696
I would see, you know, the
shuttle launches on TV,

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00:02:41,696 --> 00:02:43,636
but the truth is, I didn't
know what the path was

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00:02:43,696 --> 00:02:44,466
for me to get here.

51
00:02:44,736 --> 00:02:48,236
I got involved in NASA-related
research through my PhD work

52
00:02:49,316 --> 00:02:51,536
with a Harriett Jenkins
fellowship,

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00:02:51,536 --> 00:02:55,556
which allowed me not only to
learn about what NASA needed

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00:02:55,556 --> 00:02:57,816
and how I could help with
some of the technology

55
00:02:57,816 --> 00:03:01,176
that they were developing, but
also gave me the opportunity

56
00:03:01,176 --> 00:03:03,636
to come here to NASA Glenn
and do an internship.

57
00:03:03,896 --> 00:03:07,426
I knew I needed to work hard,
and, you know, so I did,

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00:03:07,426 --> 00:03:11,856
and that allowed me to then
become a Pathways intern,

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00:03:11,936 --> 00:03:16,096
and then from there, be
hired as a civil servant